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JENNIFER L. SKORD MOORE & VAN ALLEN 2200 WEST MAIN STREET, SUITE 800 DURHAM, NC 27705			VERDIER, CHRISTOPHER M	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/615,451	Applicant(s) REGAN ET AL.
	Examiner	Art Unit
	Christopher Verdier	3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 08 July 2003 and 22 June 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 16-18 is/are allowed.

6) Claim(s) 1,2,7-15,19,22,27 and 28 is/are rejected.

7) Claim(s) 3-6, 20-21, 23-26 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 08 July 2003 is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10-13-03.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

Receipt and entry of Applicants' Preliminary Amendments dated July 8, 2003 and June 22, 2004 are acknowledged.

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the journal boxes (figures 1-3) as described in the specification on page 10, lines 7-9. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: Appropriate correction is required.

On page 1, line 6, "flotations" should be changed to -- flotation --.

On page 14, line 9, "13-14" should be changed to -- 15-16 --.

On page 14, lines 9-10, "15-16" should be changed to -- 13-14 --.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 8, which recites "means for adjusting the elevation of said turbine relative to said platform", has no antecedent basis in the specification for what the "means for adjusting the elevation" is.

Claim 17, which recites the length of the blades varying substantially smoothly from a minimum length for those ones of the blades positioned towards the opposed ends of the rotor to a maximum length for at least one of the blades positioned intermediate the opposed ends, has no antecedent basis in the specification for the above underlined limitation.

Examiner's Suggestions to Claim Language

The following are suggestions to improve the clarity and precision of the claims:

In claim 1, line 4, "a" may be changed to -- said --.

In claim 1, line 14, "a" may be changed to -- the --.

In claim 3, line 4, -- of said rotor -- may be inserted after "center".

In claim 5, line 4, -- of said rotor -- may be inserted after "center".

In claim 12, line 4, "a" may be changed to -- said --.

In claim 12, line 19, "a" may be changed to -- the --.

In claim 19, line 5, "a" may be changed to -- said --.

In claim 19, line 17, "a" may be changed to -- the --.

In claim 23, line 4, -- of said rotor -- may be inserted after "center".

In claim 25, line 4, -- of said rotor -- may be inserted after "center".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 14, line 3, "along the associated rotor" is unclear if this is meant to refer to the rotor of the first water turbine, the rotor of the second water turbine, or the rotor of the first water turbine and the rotor of the second water turbine.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 10, 11/1, 11/10, 19, and 27/19 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 58-104,370. Note the apparatus for generating power from a water current in a body of water, comprising a longitudinally extending flotation platform 3A and 3B for maintaining the apparatus afloat in the body of water, with the platform comprising a forward part (adjacent 7 in figure 1) having opposed diverging sides 8 extending outwardly and rearwardly from a forward end apex (at 7) to first and second elongated rearward parts 3A, 3B, with the first rearward part extending longitudinally rearwardly from the forward part, with the second rearward part extending longitudinally rearwardly from the forward part substantially parallel to the first rearward part, and an unnumbered longitudinal opening extending downwardly through the platform between the first and second parts, and a water turbine 2 carried by the platform for generating power in response to the water current, with the turbine comprising a turbine rotor 2A longitudinally extending transversely across the opening between opposed ends of the rotor, with the rotor rotatably mounted to the platform for rotation about a rotor axis, and plural unnumbered turbine blades extending outwardly from the rotor for operative communication with the water current through the downward opening. A deflector 5, 6 is mounted to the platform at the forward end for deflecting debris floating in the body of water. The opening is laterally bounded by unnumbered opposed downwardly and

longitudinally extending inner side walls for channeling water current communicating with the blades. The first rearward part extends longitudinally rearwardly from the forward part to a first distal end, and the second rearward part extends longitudinally rearwardly from the forward part substantially parallel to the first rearward part to a second distal end. Also disclosed is a method of generating power from the water current, comprising providing a first power generation station, floating the station in the body of water with the forward end apex directed upstream in the water current, and controllably restraining downstream movement of the platform, via elements 5, 6.

Claims 1, 7-8, 11/1, 11/7, 11/8, 19, and 27/19 are rejected under 35 U.S.C. 102(b) as being anticipated by Dawson 867,192. Note the apparatus for generating power from a water current in a body of water, comprising a longitudinally extending flotation platform shown generally at 1 for maintaining the apparatus afloat in the body of water, with the platform comprising a forward part 37 having opposed diverging sides 38, 38 extending outwardly and rearwardly from a forward end apex (at the tip of 37) to first and second elongated rearward parts 1, 1 with the first rearward part extending longitudinally rearwardly from the forward part, with the second rearward part extending longitudinally rearwardly from the forward part substantially parallel to the first rearward part, and an unnumbered longitudinal opening extending downwardly through the platform between the first and second parts, and a water turbine 34 carried by the platform for generating power in response to the water current, with the turbine comprising a turbine rotor 32 longitudinally extending transversely across the opening between opposed ends of the rotor, with the rotor rotatably mounted to the platform for rotation about a

rotor axis, and plural unnumbered turbine blades extending outwardly from the rotor for operative communication with the water current through the downward opening. The opening is laterally bounded by unnumbered opposed downwardly and longitudinally extending inner side walls for channeling water current communicating with the blades. The turbine is carried by the platform at an adjustable elevation in relation to the platform via elements 5, 7, and hydraulic jacks 13. The language in claim 8 invokes 35 USC 112, sixth paragraph. Jacks 13 are means for adjusting the elevation of the turbine relative to the platform. Jacks 13 perform the identical function specified in the claim, no explicit definition in the applicant's specification excludes jacks 13 as an equivalent, and the jacks 13 perform the same function in substantially the same way and produce substantially the same result, and are therefore considered to be an equivalent to applicant's elevation mechanism 60, 65. The first rearward part extends longitudinally rearwardly from the forward part to a first distal end, and the second rearward part extends longitudinally rearwardly from the forward part substantially parallel to the first rearward part to a second distal end. Also disclosed is a method of generating power from the water current, comprising providing a first power generation station, floating the station in the body of water with the forward end apex directed upstream in the water current, and controllably restraining downstream movement of the platform, via cables 63.

Claims 1, 11/1, 12-13, 19, 27/19, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Garrison 385,261 (figures 3-5). Note the apparatus for generating power from a water current in a body of water, comprising a longitudinally extending flotation platform shown generally at A for maintaining the apparatus afloat in the body of water, with the platform

comprising a forward part (to the right in figure 4) having opposed unnumbered diverging sides extending outwardly and rearwardly from a forward end apex (at the tip of the right forward part in figure 4) to first and second unnumbered elongated rearward parts, with the first rearward part extending longitudinally rearwardly from the forward part, with the second rearward part extending longitudinally rearwardly from the forward part substantially parallel to the first rearward part, and an unnumbered longitudinal opening extending downwardly through the platform between the first and second parts, and a water turbine G' carried by the platform for generating power in response to the water current, with the turbine comprising an unnumbered turbine rotor longitudinally extending transversely across the opening between opposed ends of the rotor, with the rotor rotatably mounted to the platform for rotation about a rotor axis, and plural unnumbered turbine blades extending outwardly from the rotor for operative communication with the water current through the downward opening. The opening is laterally bounded by unnumbered opposed downwardly and longitudinally extending inner side walls for channeling water current communicating with the blades. The first rearward part extends longitudinally rearwardly from the forward part to a first distal end, and the second rearward part extends longitudinally rearwardly from the forward part substantially parallel to the first rearward part to a second distal end. Also disclosed is a method of generating power from the water current, comprising providing a first power generation station, floating the station in the body of water with the forward end apex directed upstream in the water current, and controllably restraining downstream movement of the platform, via cable C. Concerning claims 12-13, the platform has an unnumbered third elongated rearward part (between turbines G' in figure 4) positioned between the first and second rearward parts and extending longitudinally rearward

from the forward part substantially parallel to the first and second rearward parts, and first and second unnumbered longitudinal openings (carrying turbines G'), with the first longitudinal opening extending downwardly through the platform between the first and third rearward parts, and the second longitudinal opening extending downwardly through the platform between the second and third rearward parts, with first and second water turbines G' carried by the platform for generating power in response to the water current in the body of water. Each turbine comprises an associated unnumbered turbine rotor rotatably mounted to the platform and plural unnumbered associated turbine blades. The recitation in claim 12, lines 20-21 of "for rotation about an associated rotor axis" is a recitation of intended use and does not explicitly require that the turbines have separate rotor axes; a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art.

See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). The rotor of the first water turbine extends transversely across the first opening and the rotor of the second water turbine extends transversely across the second opening. The first downward opening is laterally bounded by opposed downwardly and longitudinally extending inner sidewalls for channeling water current communicating with the blades of the first water turbine, and the second downward opening is laterally bounded by opposed downwardly and longitudinally extending inner sidewalls for channeling water current communicating with the blades of the second water turbine. The first and second distal ends

each have an angle of taper which conforms with the angle of taper at which the diverging sides of the forward part of the platform extend rearwardly from the forward end apex of the platform.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 11/1, 19, 27/19, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCreary 972,010 in view of Japanese Patent 58-104,370. McCreary discloses an apparatus for generating power from a water current in a body of water substantially as claimed, comprising a longitudinally extending flotation platform 1 for maintaining the apparatus afloat in the body of water, with the platform comprising a forward part (adjacent 2

and to the right in figures 1 and 2) having opposed unnumbered diverging sides extending outwardly and rearwardly from a forward end apex (near 2) to first and second unnumbered elongated rearward parts, with the first rearward part extending longitudinally rearwardly from the forward part, with the second rearward part extending longitudinally rearwardly from the forward part substantially parallel to the first rearward part, and an unnumbered longitudinal opening extending downwardly through the platform between the first and second parts, and a water turbine near 7 carried by the platform for generating power in response to the water current, with the turbine comprising a turbine rotor near 7 longitudinally extending transversely across the opening between opposed ends of the rotor, with the rotor rotatably mounted to the platform for rotation about a rotor axis. The opening is laterally bounded by unnumbered opposed downwardly and longitudinally extending inner side walls for channeling water current communicating with the turbine. The first rearward part extends longitudinally rearwardly from the forward part to a first distal end, and the second rearward part extends longitudinally rearwardly from the forward part substantially parallel to the first rearward part to a second distal end. The first and second distal ends each have an angle of taper which conforms with the angle of taper at which the diverging sides of the forward part of the platform extend rearwardly from the forward end apex of the platform. Also disclosed is a method of generating power from the water current, comprising providing a first power generation station, floating the station in the body of water with the forward end apex directed upstream in the water current, and controllably restraining downstream movement of the platform, via unnumbered guy ropes. However, McCreary does not disclose plural turbine blades extending outwardly from the rotor for

operative communication with the water current through the downward opening. Rather, paddles 9 are attached to chains 8 to drive the turbine 7.

Japanese Patent 58-104,370 shows a water turbine 2, having plural unnumbered turbine blades extending outwardly from a rotor 2A for operative communication with water current through an unnumbered downward opening in a platform 3A, 3B, for the purpose of obtaining efficient generation of electricity.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to replace the paddle and chain arrangement of McCreary with a turbine having plural turbine blades extending outwardly from the rotor for operative communication with the water current through the downward opening, as taught by Japanese Patent 58-104,370, for the purpose of obtaining efficient generation of electricity.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson 867,192 in view of Weisenborn 1,396,609. Dawson discloses an apparatus for generating power substantially as claimed as set forth above, including cables 63 connected to a pier 61 for restraining downstream movement of the platform, but does not disclose a winch mounted on the platform and a mooring cable reelably wound on the winch, with the cable attachable to an anchorage for restraining downstream movement of the platform.

Weisenborn shows a current motor with a platform 10-16, having a winch 17 mounted on the platform and a mooring cable reelably wound on the winch, with the cable attachable to an anchorage, for the purpose of restraining downstream movement of the platform.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to replace the cables of Dawson with a winch mounted on the platform and a mooring cable reelably wound on the winch, with the cable attachable to an anchorage, as taught by Weisenborn, for the purpose of restraining downstream movement of the platform.

Claims 10 and 11/10 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Garrison 385,261 in view of Wiggs 4,590,386. Garrison discloses an apparatus for generating power substantially as claimed as set forth above, including a platform A having a forward end, but does not disclose a deflector mounted to the platform at the forward end for deflecting debris floating in the body of water.

Wiggs (figure 1) shows a water turbine having a platform 1 with a deflector 5 fastened to the platform at a forward end, for the purpose of providing protection of the water turbine from debris.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the water turbine apparatus of Garrison with a deflector

mounted to the platform at the forward end, as taught by Wiggs, for the purpose of providing protection of the water turbine from debris.

Claims 2, 11/2, 22, and 27/22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 58-104,370 in view of Frey 3,923,416. The Japanese Patent 58-104,370 discloses an apparatus and method for generating power substantially as claimed as set forth above, including a water turbine 2 with unnumbered blades, but does not disclose that the blades are relatively narrow, flexible, elongated blades and are arranged in circumferentially spaced rows extending along the rotor, with the blades in each row being distanced from each other in succession by a space.

Frey shows a rotary turbine 10 having blades 12 that are relatively narrow, flexible, elongated blades and are arranged in circumferentially spaced rows extending along a rotor 11, with the blades in each row being distanced from each other in succession by a space, for the providing high mechanical efficiency, and lower weight for a given output, when generating rotary power from the energy in a stream of fluid.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the water turbine of the Japanese Patent such that the blades are relatively narrow, flexible, elongated blades and are arranged in circumferentially spaced rows extending along the rotor, with the blades in each row being distanced from each other in succession by a space, as taught by Frey.

Claims 14-15 (as far as they are definite) are rejected under 35 U.S.C. 103(a) as being unpatentable over Garrison 385,261 in view of Frey 3,923,416. Garrison discloses an apparatus and for generating power substantially as claimed as set forth above, including water turbines G' with unnumbered blades, but does not disclose that the blades are relatively narrow, flexible, elongated blades and are arranged in circumferentially spaced rows extending along the rotor, with the blades in each row being distanced from each other in succession by a space.

Frey shows a rotary turbine 10 having blades 12 that are relatively narrow, flexible, elongated blades and are arranged in circumferentially spaced rows extending along a rotor 11, with the blades in each row being distanced from each other in succession by a space, for the providing high mechanical efficiency, and lower weight for a given output, when generating rotary power from the energy in a stream of fluid.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the water turbines of Garrison such that the blades are relatively narrow, flexible, elongated blades and are arranged in circumferentially spaced rows extending along the rotor, with the blades in each row being distanced from each other in succession by a space, as taught by Frey.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McQueen, Storer, Hoover, Cote, Dougine are cited to show water wheels with adjustable elevations.

Pattosien is cited to show a flotation platform with dual water turbines.

Senn is cited to show a water turbine with flexible blades.

Salomon is cited to show a water turbine with a winch.

Allowable Subject Matter

Claims 16-18 are allowed.

Claims 3-6, 11/3, 11/4, 11/5, 11/6, 20-21, 23-26, 27/20, 27/21, 27/23, 27/24, 27/25, and 27/26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.
April 1, 2005

Christopher Verdier
Christopher Verdier
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Art Unit 3745